the snow cover at the close of January was less extensive and deep than for a similar date in any other year of which we have records. The run-off during January was light and streams were unusually low. While the water supply is adequate in central and northern counties, there is some apprehension in other sections.

January, 1912, stands in marked contrast with January, 1911, which was a month of unusually heavy precipitation in all parts of California. The snow cover then was extensive and deep. This condition followed a long dry period which was not broken until January 9.

Summit.—The following table shows the depth of snow on the ground at Summit, Cal., on certain dates in January during the period 1907 to date:

	Jan. 1.	Jan. 15.	Jan. 31.
	Inches.	*Inches.*	*Inches.*
1907	45	142	148
1908	87	72	87
1909	28	90	172
1910	54	87	68
1911	4	136	218
1912	60	46	41

SUNSHINE.

The following table gives the total hours of sunshine and percentages of the possible:

Station.	Hours.	Percentage of possible.	Station.	Hours.	Percentage of possible.
Eureka	60	20	Sacramento	91	30
Fresno	146	47	San Diego	235	74
Los Angeles	232	73	San Francisco	114	37
Mount Tamalpais	91	30	San Jose	174	55
Red Bluff	108	36	San Luis Obispo	140	45

There was much more sunshine in the southern counties than during January, 1911, but less in the northern counties.

CHANGES IN NAMES OF STATIONS.

The following changes have been made in the names of stations, and the new names are used beginning with the present issue:

Brush Creek changed to Stanwood.
Daunt changed to Springville.
Nimshew changed to De Sabla.
Pollasky changed to Friant.

NOTES ON THE RIVERS OF THE SACRAMENTO AND SAN JOAQUIN WATERSHEDS FOR JANUARY, 1912.

By N. R. TAYLOR, Local Forecaster.

SACRAMENTO WATERSHED.

The stages of the rivers of this watershed averaged from 1 foot to slightly over 2 feet above those of the preceding month. They were, however, unprecedentedly low for the season. With the exception of the record at Red Bluff, in 1902, when extreme low water for the month was reached, previous low-water records were broken in the drainage basin of the Sacramento Valley.

The following data from selected points in the Sacramento watershed show river conditions during January: Kennett, 3.2 feet, 2.0 feet below the normal; Red Bluff, 3.7 feet, 3.1 feet below the normal; Colusa, average 5.6 feet, 7.6 feet below normal; Knights Landing, average 3.6 feet, 8.5 feet below normal; Sacramento City, average 8.1 feet, 8.6 feet below the normal; Folsom, 3.1 feet, 3.1 feet below the normal; Oroville, average 2.7 feet, 2.5 feet below the normal; Marysville, average 7.2 feet, 3.4 feet below the normal.

The first general rise during the season of any importance occurred during the last decade of the month. Coincident with the heavy rains in the upper part of the Sacramento Valley the river at Kennett rose 5 feet during the 24 hours ending at 7 a. m. of the 26th, when a stage of 13.5 feet was recorded. The crest of this rise reached Colusa on the 27th, and Knights Landing and Sacramento City on the 28th.

The rise below Monroeville was greatly augmented by the output of Stony Creek, which, on the 26th, rose nearly 9 feet in less than 24 hours. The highest stage reached on the Sacramento River was 21.9 feet at Colusa at 4 p. m. of the 26th.

Although the rainfall in the watersheds of the American, Feather, and Yuba Rivers was much less than in the upper reaches of the Sacramento, sharp rises occurred in those streams, the greatest of which was 5 feet at Oroville on the Feather River.

By the last of the month the rivers were falling, and the upper Sacramento and many of the smaller watercourses were rapidly approaching the extreme low-water stages that prevailed previous to the rain.

The rainfall in all sections of the Sacramento drainage area was deficient, especially so in the foothill regions and along the west slopes of the Sierra.

SAN JOAQUIN WATERSHED.

The average stages of all rivers in this watershed varied only slightly from those of the preceding month, and were from 1 to 5 feet below the January normal. With few exceptions all streams were the lowest ever before known during the month in question.

While the rainfall throughout the San Joaquin Valley was deficient the normal was more closely approached than in that of the Sacramento. But its effect on the rivers was not appreciable in the San Joaquin between Friant and Firebaugh, nor in the Merced, and barely so in the San Joaquin below the mouth of the Stanislaus. The Tuolumne, Mokelumne, Cosumnes, Stanislaus, and Calaveras Rivers rose slightly, the rises ranging from 1 to somewhat over 2 feet.

A STUDY OF DRY SEASONS IN SAN DIEGO.

By FORD A. CARPENTER, Local Forecaster.

Considerable apprehension has been felt as to the outcome of the present season in San Diego as regards rainfall. Twelve years ago similar conditions prevailed, and in the Monthly Weather Review of January, 1900, the editor discussed the light rainfall in San Diego, concluding with this statement:

> It would, however, seem that there is little likelihood that the rainfall for the season 1899–1900 will be smaller than four inches, so that the three seasons just past will represent nothing worse than has happened twice before in 10 years, namely, between 1855 and 1860, and between 1869 and 1872.[1]

The seasonal rainfall for 1899–1900 was 5.97 inches or 1.97 inches more than the estimated amount.

A perusal of the accompanying table will show that while the rainfall to date has been scanty it does not indicate that the balance of the season will be likewise dry. During the past 62 years San Diego has experienced

[1] Monthly Weather Review, Vol. XXVIII, pp. 20-21.